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C. Brant Cook  
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#10  
3-15-02

Case CM1817

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of :  
Jean-Luc Philippe Bettiol et al. : Group Art Unit 1751  
Serial No. 09/485,650 : Examiner A. Puri  
Filed April 5, 2000 :  
Customer No. 7080 :  
For Detergent Compositions :  
Comprising a Mannanase and a  
Soil Release Polymer :

BRIEF ON APPEAL

Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Enclosed, pursuant to 37 CFR 1.192(a), is Appellant's brief on Appeal for the above application. The Brief is being forwarded in triplicate.

Please charge the fee of \$320.00 pursuant to 37 CFR 1.17(c) to Deposit Account No. 16-2480 for the filing of the brief in support of an appeal. The Commissioner is also authorized to charge any additional fees with may be required to this account. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

By

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October 30, 2001  
Customer No. 27752

(BriefonAppealTrans.doc)  
(Last Revised 3/29/01)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on October 20, 2001

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Signature of Attorney

Case CM1817

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the Application of :  
Jean-Luc Philippe Bettiol et al. :  
Serial No.: 09/485,650 : Group Art Unit 1751  
Filed: April 5, 2000 : Examiner Anil K. Puri  
For DETERGENT  
COMPOSITIONS  
COMPRISING A  
MANNANASE AND A  
PROTEASE

**APPEAL BRIEF**

Box AF  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir,

This is an appeal from the Final Rejection mailed July 31, 2001 rejecting Claims 1 and 12-31. An Amendment After Final has not been submitted, and thus, an Advisory Action has not been received. A timely Notice of Appeal is being submitted along with the present Appeal Brief. The instant Appeal Brief is being filed in triplicate.

**REAL PARTY IN INTEREST**

The real party in interest is The Procter & Gamble Company having a principal place of business in Cincinnati, Ohio. The Procter & Gamble Company has received the entire right, title and interest to the subject matter of the present appeal by way of an assignment executed on October 21, 1998 and recorded on August 7, 2000 at reel number 011125, and frame number 0769.

### **RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences known to the Appellants, or known to Appellants' legal representative, that will directly affect the Board's decision in the present appeal.

### **STATUS OF CLAIMS**

Independent claim 1 and dependent claims 12-31 stand under final rejection, from which the instant appeal is taken.

### **STATUS OF AMENDMENTS**

A single amendment was filed, prior to final action, on May 16, 2001. The amendment included changes to the specification and argument regarding the rejections set forth in the Office Action mailed on March 01, 2001. Appellants received a Final Office Action, which was mailed on July 31, 2001. Appellants have not filed an Amendment After Final, and thus, have not received an Advisory Action.

### **SUMMARY OF INVENTION**

The present invention relates to laundry detergent compositions comprising a mannanase and a cotton soil release polymer for superior cleaning and soil release performance. Claim 1 is the only independent claim of the present application. The balance of the claims depends, either directly or ultimately, from independent Claim 1. Claim 1 relates to a detergent composition comprising a mannanase enzyme and a cotton polyethyleneimine soil release polymer. Claim 12, 13 and 14 define the amounts in which the mannanase of Claim 1 may be present in the claimed compositions. Claims 15, 16 and 17 define the amounts in which the cotton polyethyleneimine soil release polymer of Claim 1 may be present in the claimed compositions. Claims 18 and 19 describe the structure of the subject soil release polymer and the group from which it may be selected. Claims 20-30 recite the other possible ingredients of the claimed composition, including a surfactant, builder and conventional soil release polymer. Claim 31 relates to a method of cleaning fabric employing the detergent composition of the present invention. A complete set of the appealed claims is set forth in Appendix 1 at the conclusion of this communication.

### **ISSUE**

- (1) Whether the Examiner has established a *prima facie* case of obviousness of any of the claimed subject matter over US Patent

No. 5,858,948 to Ghosh [hereinafter "Ghosh"] in combination with  
WO 95/35362 to Cuperus [hereinafter "Cuperus"]?

### **GROUPING OF CLAIMS**

The rejected claims have been grouped together in the § 103 rejection from which the instant appeal is taken. Appellants assert that, for purposes of this appeal, rejected Claims 1 and 12-31 stand or fall together.

### **REFERENCES**

The Examiner relies upon the following references:

#### **US 5,858,948 to Ghosh**

Ghosh relates to liquid laundry detergent compositions comprising water soluble and/or dispersible, modified polyamines having functionalized backbone moieties that provide cotton soil release benefits and protease enzymes. See Abstract of the Disclosure, U.S. 5,858,949. Specifically, the reference teaches that subject nonionic or aromatic surfactants may be combined with a protease enzyme and/or a non-cotton, soil release agent. See Paper No. 6; page 3. As the Examiner correctly notes, Ghosh fails to disclose or suggest the mannanase enzyme of the claimed invention. See Paper No. 6; page 3.

#### **WO 95/35362 to Cuperus**

Cuperus relates to cleaning compositions comprising cell wall degrading enzymes having pectinases and/or hemicellulases and optionally cellulases. See Abstract of the Disclosure, WO 95/35362. The reference further discloses that the subject compositions may comprise a surfactant, builder and bleaching agent. See Paper No. 6; page 3. Undisputedly, the reference neither teaches nor suggests the soil release polymer of the present invention.

### **THE REJECTIONS**

The Examiner has rejected claims 1 and 12-31 under 35 U.S.C. §103(a) as being unpatentable over Ghosh in combination with Cuperus. Specifically, the Examiner asserts that it would have been obvious to a person of ordinary skill in the art to modify the primary reference of Ghosh with the mannanase enzymes of the secondary reference of Cuperus. See Paper No. 6; page 3. The Examiner further contends that such a modification would be obvious because "...one would expect

that the use of protease enzyme as 'Deterasive enzyme' as used herein, means any enzyme having a cleaning, stain removing or otherwise beneficial effect in laundry, hard surface cleaning or personal care detergent composition as taught by Ghosh et al would be similarly useful...." See Paper No. 6; pages 3-4.

### **ARGUMENT**

- (1) The Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 of any of the claimed subject matter over Ghosh in combination with Cuperus.

Appellants submit that the references of Ghosh and Cuperus neither teach nor suggest the claimed invention for purposes of 35 U.S.C. § 103. Obviousness under 35 U.S.C. § 103 is a question of law based on the following factual inquiries: (1) the scope and the content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of secondary considerations. ***Graham v. John Deere Co.***, 383 U.S. 1, 17, 148 U.S.P.Q. 459, 567 (1966). To satisfy Step (3) the Patent Office must identify where the prior art provides a motivating suggestion to make the modification proposed in Step (2). ***In re Jones***, 958 F.2d 347, 21 U.S.P.Q. 2d 1941 (Fed. Cir. 1992).

#### **US 5,858,948 to Ghosh**

Appellants submit that Ghosh neither teaches nor suggests the claimed invention for purposes of 35 U.S.C. § 103. The disclosure of Ghosh is summarized above in the "References" section of the instant communication. To reiterate, the Examiner has sought to modify the reference of Ghosh with the mannanase enzymes of Cuperus. Appellants submit that, in doing so, the Examiner has failed to establish a *prima facie* case of obviousness of the present invention for purposes of 35 U.S.C. § 103.

The Examiner relies upon Ghosh's disclosure of a protease enzyme to conclude that said disclosure suggests the incorporation of the claimed mannanase enzyme, as "one would expect that the use of protease enzyme is similarly useful and applicable in cleaning or personal care" See Paper No. 8, page 3. Appellants strongly urge that the Examiner has misconstrued the applied references, the MPEP and surrounding case law in reaching his erroneous and all-encompassing conclusion with regards to the scope of Ghosh. Indeed, the Examiner's

interpretation of the Ghosh disclosure amounts to an all-season hunting license with which the Examiner may reject any facet of any application of any applicant. Applying the flawed rationale of the Examiner, many other articles would similarly be rendered obvious over the disclosure of Ghosh. The conventional toothbrush, which arguably "is similarly useful and applicable in cleaning or personal care," would be rendered obvious applying the Examiner's interpretation of Ghosh. Regrettably, the rationale adopted by the Examiner constitutes a new and disturbing trend by which the advancement of science is replaced with the advancement of vocation.

The Appellants submit that the primary reference of Ghosh would not motivate a person of ordinary skill in the art to modify the reference with the mannanase enzymes of the present invention. The courts have held, prior patents are references only for what they clearly disclose or suggest. *In re Randol and Redford*, 425 F.2d 1268, 165 U.S.P.Q. 50, 55 (C.C.P.A. 1974). Appellants submit that Ghosh does not clearly disclose the employment of a mannanase enzyme, nor does the reference suggest such employment. On the contrary, Ghosh discloses, "...Preferred deterative enzymes are hydrolases such as proteases, amylases and lipases...Preferred enzymes for laundry purposes include...proteases, cellulases, lipases and peroxidases." See Ghosh, Col. 40; lines 11-17.

Appellants urge that, had Ghosh contemplated the employment of a mannanase enzyme into the subject compositions, such an employment would have certainly been disclosed. After all, the reference lists and discusses, at length, numerous other enzymes suitable for employment in the claimed compositions. Appellants wish to remind the Board, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q. 2d 1780, 1783 (Fed. Cir. 1992). Appellants submit the reference of Ghosh makes no such suggestion.

Accordingly, the primary reference of Ghosh may not be properly modified to render the present invention obvious under 35 U.S.C. § 103. In doing so, the Examiner has failed to establish a *prima facie* case to the contrary. Indeed, the courts have established, in order to complete the PTO's *prima facie* case and shift the burden of going forward to applicant, there must be evidence (other than speculation by the PTO) that one of ordinary skill in the art would have been motivated to make the modifications of the prior art necessary to arrive at the claimed subject matter. *In re Jones*, 958 F.2d 347, 21 U.S.P.Q. 2d 1941, 1944 (Fed. Cir. 1992). The Appellants urge that the Examiner has provided no such evidence. Thus, Appellants respectfully request reversal of the Examiner's erroneous rejection and allowance of the present application.

**WO 95/35362 to Cuperus**

Appellants submit that the reference of Cuperus would not motivate a person of ordinary skill in the art to combine Cuperus with the Ghosh to render the claimed invention obvious for purposes of 35 U.S.C. § 103. The disclosures of Cuperus and Ghosh are summarized above in the "References" section of the instant communication. To reiterate, the Examiner has sought to modify the reference of Ghosh with the mannanase enzymes of Cuperus. Appellants submit that the Examiner has failed to establish a *prima facie* case of obviousness of the present invention for purposes of 35 U.S.C. § 103. Undeniably, the burden of establishing a *prima facie* case of obviousness falls upon the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979).

As the previous discussion revealed, there exists nothing in the primary reference of Ghosh that would motivate a person of ordinary skill in the art to modify the reference with the mannanase enzymes of Cuperus. Moreover, it is the Appellants' position that the secondary reference of Cuperus actually teaches away the utility of its combination with Ghosh. Indeed, the courts have held, consideration must be given to prior art that would lead one away from the invention as well as that which is argued to lead toward it. *Mendenhall v. Astec Industries, Inc.*, 13 U.S.P.Q. 2d 1913, 1939 (Tenn. 1988), *aff'd*, 13 U.S.P.Q. 2d 1956 (Fed. Cir. 1989).

All motivation to combine the mannanase enzymes of Cuperus with the soil release agents of Ghosh is removed by Cuperus' clear contemplation of soil removal agents. Cuperus explicitly discloses, "The present invention not only seeks to solve the problem of removing stains of vegetable origin, but it also aims to help remove soil and dirt..." See WO 95/353662; pages 3-4. As the reference clearly contemplated the employment of soil removal agents into the subject composition and yet explicitly endorsed the employment of the subject cell wall degrading enzymes, such as mannanase, for the removal of soil and dirt, there exists no motivation to modify the reference via the addition of the cotton soil release polymer of the claimed invention. Certainly, a person of ordinary skill in the art would not be motivated to modify Cuperus to achieve that which the reference purportedly accomplishes via the employment of the subject, cell wall degrading enzymes.

Nonetheless, the Examiner did not find the above argument to be persuasive as, "...[the] two references are in the same analogous art in cleaning composition..." See Paper No. 8, page 3. Appellants do not dispute that the primary and secondary references relied upon the Examiner relate to the detergency art. Indeed, the Appellants submit that the present invention, too, is within the realm of the detergency art. However, an obviousness rejection cannot properly be imposed

simply by virtue of the fact that the cited references and claimed invention are in an analogous art. There exists no such standard in patent law. Yet, courts have established, a prior patent must be considered in its entirety (i.e., as a whole), including portions that would lead away from the invention in issue. ***Panduit Corp. v. Dennison Manufacturing Co.***, 810 F. 2d 1561, 1 U.S.P.Q. 2d 1593 (Fed. Cir. 1987). Clearly, the Examiner has failed to consider either of the applied references in their entirety, and has failed to consider the Applicants' interpretation of the applied references, in their entirety.

Regrettably, Appellants assert that the Examiner of record has misconstrued and misapplied 35 U.S.C. § 103 and the plethora of surrounding case law to the claimed invention. Further, it is submitted that the instant appeal could have been avoided, and the valuable time of the Board spared, had the Examiner taken the time to review the claimed invention and applied references in their entirety, as the Appellants thoroughly reviewed all communications from the Examiner in their entirety. Rather, the Examiner has exhausted every effort to finalize prosecution of the case, with as little effort as possible. Accordingly, Appellants respectfully request reversal of the Examiner's rejection and allowance of the present case.



**CONCLUSION**

For the reasons advanced above, Appellants respectfully submit that the rejection of claims 1 and 12-31 as being obvious under 35 U.S.C. § 103 is improper. The Examiner has failed to establish a *prima facie* case of obviousness of claims 1 and 12-31 over any of the applied references.

In addition to the arguments set forth above, any and all arguments submitted by the Appellants in prosecution of the above-identified application are incorporated herein by reference.

Accordingly, Appellants respectfully request reversal of the Examiner's rejection in the above-identified case.

Respectfully submitted,

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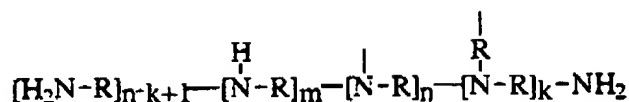
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**APPENDIX 1 – APPEALED CLAIMS**

1. A laundry detergent composition comprising a mannanase enzyme and a cotton polyethyleneimine soil release polymer.
12. A laundry detergent composition according to claim 1 wherein said mannanase is present at a level of from about 0.0001% to about 2% pure enzyme by weight of total composition.
13. A laundry detergent composition according to claim <sup>12</sup> wherein said mannanase is present at a level of from about 0.0005% to about 0.5% pure enzyme by weight of total composition.
14. A laundry detergent composition according to claim <sup>13</sup> wherein said mannanase is present at a level of from about 0.001% to about 0.1% pure enzyme by weight of total composition.
15. A laundry detergent composition according to claim 1 wherein the cotton polyethyleneimine soil release polymer is comprised at a level of from about 0.0001% to about 20%.
16. A laundry detergent composition according to claim <sup>15</sup> wherein the cotton polyethyleneimine soil release polymer is comprised at a level of from about 0.001% to about 15%.
17. A laundry detergent composition according to claim <sup>16</sup> wherein the cotton polyethyleneimine soil release polymer is comprised at a level of from about 0.01% to about 10%.
18. A laundry detergent composition according to claim 1 wherein the cotton polyethyleneimine soil release polymer is of the following formula :

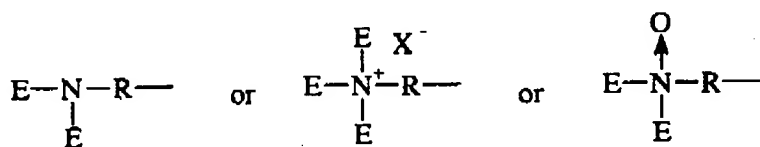


having a modified polyamine formula  $V_{(n+1)}W_mY_nZ$  or a polyamine backbone corresponding to the formula:

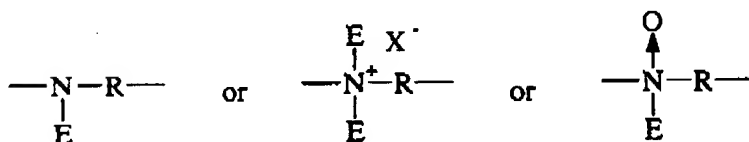


having a modified polyamine formula  $V_{(n-k+1)}W_mY_nY'_kZ$ , wherein k is less than or equal to n, said polyamine backbone prior to modification has a molecular weight greater than about 200 daltons, wherein

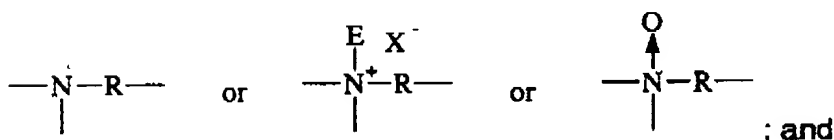
i) V units are terminal units having the formula:



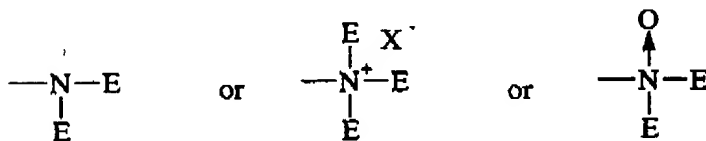
ii) W units are backbone units having the formula:



iii) Y units are branching units having the formula:



iv) Z units are terminal units having the formula:



wherein backbone linking R units are selected from the group consisting of C<sub>2</sub>-C<sub>12</sub> alkylene, C<sub>4</sub>-C<sub>12</sub> alkenylene, C<sub>3</sub>-C<sub>12</sub> hydroxyalkylene, C<sub>4</sub>-C<sub>12</sub> dihydroxyalkylene, C<sub>8</sub>-C<sub>12</sub> dialkylarylene,  $-(R^1O)_xR^1-$ ,  $-(R^1O)_xR^5(OR^1)_x-$ ,  $-(CH_2CH(OR^2)CH_2O)_z-(R^1O)_yR^1(OCH_2CH(OR^2)CH_2)_w-$ ,  $-C(O)(R^4)_rC(O)-$ ,  $-CH_2CH(OR^2)CH_2-$ , and mixtures thereof; wherein R<sup>1</sup> is C<sub>2</sub>-C<sub>6</sub> alkylene and mixtures thereof; R<sup>2</sup> is hydrogen,  $-(R^1O)_xB$ , and mixtures thereof; R<sup>3</sup> is C<sub>1</sub>-C<sub>18</sub> alkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>7</sub>-C<sub>12</sub> alkyl substituted aryl, C<sub>6</sub>-C<sub>12</sub> aryl, and mixtures thereof; R<sup>4</sup> is C<sub>1</sub>-C<sub>12</sub> alkylene, C<sub>4</sub>-C<sub>12</sub> alkenylene, C<sub>8</sub>-C<sub>12</sub>

arylalkylene, C<sub>6</sub>-C<sub>10</sub> arylene, and mixtures thereof; R<sup>5</sup> is C<sub>1</sub>-C<sub>12</sub> alkylene, C<sub>3</sub>-C<sub>12</sub> hydroxyalkylene, C<sub>4</sub>-C<sub>12</sub> dihydroxy-alkylene, C<sub>8</sub>-C<sub>12</sub> dialkylarylene, -C(O)-, -C(O)NHR<sup>6</sup>NHC(O)-, -R<sup>1</sup>(OR<sup>1</sup>)-, -C(O)(R<sup>4</sup>)<sub>r</sub>C(O)-, -CH<sub>2</sub>CH(OH)CH<sub>2</sub>-, -CH<sub>2</sub>CH(OH)CH<sub>2</sub>O(R<sup>1</sup>O)<sub>y</sub>R<sup>1</sup>-OCH<sub>2</sub>CH(OH)CH<sub>2</sub>-, and mixtures thereof; R<sup>6</sup> is C<sub>2</sub>-C<sub>12</sub> alkylene or C<sub>6</sub>-C<sub>12</sub> arylene; E units are selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>22</sub> alkyl, C<sub>3</sub>-C<sub>22</sub> alkenyl, C<sub>7</sub>-C<sub>22</sub> arylalkyl, C<sub>2</sub>-C<sub>22</sub> hydroxyalkyl, -(CH<sub>2</sub>)<sub>p</sub>CO<sub>2</sub>M, -(CH<sub>2</sub>)<sub>q</sub>SO<sub>3</sub>M, -CH(CH<sub>2</sub>CO<sub>2</sub>M)CO<sub>2</sub>M, -(CH<sub>2</sub>)<sub>p</sub>PO<sub>3</sub>M, -(R<sup>1</sup>O)<sub>x</sub>B, -C(O)R<sup>3</sup>, and mixtures thereof; provided that when any E unit of a nitrogen is a hydrogen, said nitrogen is not also an N-oxide; B is hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, -(CH<sub>2</sub>)<sub>q</sub>SO<sub>3</sub>M, -(CH<sub>2</sub>)<sub>p</sub>CO<sub>2</sub>M, -(CH<sub>2</sub>)<sub>q</sub>(CHSO<sub>3</sub>M)CH<sub>2</sub>SO<sub>3</sub>M, -(CH<sub>2</sub>)<sub>q</sub>(CHSO<sub>2</sub>M)-CH<sub>2</sub>SO<sub>3</sub>M, -(CH<sub>2</sub>)<sub>p</sub>PO<sub>3</sub>M, -PO<sub>3</sub>M, and mixtures thereof; M is hydrogen or a water soluble cation in sufficient amount to satisfy charge balance; X is a water soluble anion; k and k' have the value from 1 to about 15; m has the value from 4 to about 400; n has the value from 0 to about 200; p has the value from 1 to 6, q has the value from 0 to 6; r has the value of 0 or 1; w has the value 0 or 1; x has the value from 1 to 100; y has the value from 0 to 100; z has the value 0 or 1.

19. A laundry detergent composition according to claim 1 wherein the cotton polyethyleneimine soil release polymer is selected from polyethyleneimine 1800E7 and its amine oxide derivatives, polyethyleneimine 1200E7 and its oxidised and/or quaternised derivatives, polyethyleneimine 600E20, and/or mixtures thereof.
20. A laundry detergent composition according to claim 1 further comprising a surfactant.
21. A laundry detergent composition according to claim 20, further comprising a nonionic surfactant
22. A laundry detergent composition according to claim 21 wherein the nonionic surfactant is an alkyl ethoxylated nonionic surfactant with a C<sub>8</sub> to C<sub>20</sub> chain length, and a degree of ethoxylation from 2 to 9.
23. A laundry detergent composition according to claim 22 wherein the alkyl ethoxylated nonionic surfactant has a C<sub>12</sub> to C<sub>16</sub>.

24. A laundry detergent composition according to claim 22 wherein the alkyl ethoxylated nonionic surfactant has a degree of ethoxylation from 3 to 7.
25. A laundry detergent composition according to claim 21 wherein the nonionic surfactant is an alkyl methyl glucamide surfactant with an alkyl chain length from C8 to C20
26. A laundry detergent composition according to claim 25 wherein the alkyl methyl glucamide surfactant has a chain length from C12 to C18.
27. A laundry detergent composition according to claim 1 further comprising a builder.
28. A laundry detergent composition according to claim 27 further comprising a builder selected from the group consisting of zeolite, sodium tripolyphosphate, layered silicate and/or mixtures thereof.
29. A laundry detergent composition according to claim 1 further comprising a conventional soil release polymer.
30. A laundry detergent composition according to claim 29 further comprising a conventional soil release polymer selected from the group consisting of an anionically end capped polyester, diethoxylated polypropylene terephthalate, and/or mixtures thereof.
31. A method of cleaning a fabric with a laundry detergent composition according to claim 1.